REMARKS

Claims 23-34 are now pending in the application. Claim 23 has been amended for purposes of clarity only. Applicants note that this amendment is not a narrowing amendment. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

SPECIFICATION

The specification its objected to under 35 U.S.C. § 132 as introducing new matter into the original disclosure.

Applicants note that claim 23 has been amended and now includes the limitation of a heater that is external to the fuel cell stack. Applicants further note that support for this amendment can be found throughout the specification and exemplary embodiments of the original disclosure, U.S. Pat. App. No. 09/948,897, filed September 7, 2001.

As shown in an exemplary embodiment in FIG. 2 of the original disclosure, the heater (e.g., heater 136) is external to the fuel cell stack. Furthermore, the original disclosure states that "[t]he first resistive heater 136 is preferably located near the fuel cell stack 102." (See paragraph [0029]).

Accordingly, Applicants respectfully request that the Examiner withdraw his objection to the specification under 35 U.S.C. § 132 for at least the above reasons.

REJECTION UNDER 35 U.S.C. § 112

Claims 23-34 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable

one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This rejection is respectfully traversed.

As stated above, claim 23 has been amended and now includes the limitation of a heater that is external to the fuel cell stack. Applicants note that support for this amendment can be found throughout the specification and exemplary embodiments of the present application.

As shown in an exemplary embodiment in FIG. 2 of the present application, the heater (e.g., heater 136) is external to the fuel cell stack. Furthermore, the present application states that "[t]he first resistive heater 136 is preferably located near the fuel cell stack 102." (See paragraph [0029]).

Accordingly, Applicants respectfully assert that claim 23, as well as its dependent claims, should be allowable for at least the above reasons.

REJECTION UNDER 35 U.S.C. § 103

Claims 23, and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Roberts et al. (U.S. Pat. No. 6,479,177) in view of Ernst et al. (U.S. Pat. No. 6,489,048). This rejection is respectfully traversed.

As best understood by Applicants, Roberts et al. fails to teach or suggest a controller that controls a hydrogen supply and an air supply **to power a heater that is external to a fuel cell stack** as claim 23 recites.

It is a longstanding rule that to establish a prima facie case of obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 143 (CCPA 1974), see MPEP §2143.03. Here, the

Examiner fails to provide **any** reference to support a finding that a controller that controls a hydrogen supply and an air supply **to power the heater that is external to the fuel cell stack** is obvious. When evaluating claims for obviousness under 35 U.S.C. §103, all of the limitations must be considered and given weight. *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983), MPEP § 2144.03. Here, it is clear that the Examiner has given little or no consideration of the limitation **and failed to give the limitation any weight**.

As shown in an exemplary embodiment of FIG. 2 of the present application, the controller (e.g., controller 160) controls the hydrogen supply (e.g., hydrogen supply 120) and the air supply (e.g., via the blower 110). The fuel cell stack provides power to the heater (e.g., resistive heater 136) to warm the fuel cell stack and the water supply (e.g., the water tank 150).

For example, the present application states that:

> [i]n step 220, the fuel cell controller 160 determines whether heating of the fuel cell stack 102 and the water supply 150 is necessary. If additional heating is necessary, control continues with step 222. In step 222, the fuel cell controller 160 starts the blower motor 110 and activates hydrogen flow using the hydrogen supply valve 122. (See paragraph [0032]).

In other words, the controller controls the hydrogen supply and the air supply **to power the heater** as claim 23 recites.

In contrast, as best understood by Applicants, Roberts et al. discloses a controller that controls the hydrogen supply and the air supply to **internally heat** the fuel cell stack. Applicants note that this internal heating is provided by the exothermic reaction of the hydrogen and oxygen within the fuel cell stack. For example, Roberts et al. states that:

> [o]nce operation of the stack had commenced, the exothermic reaction of hydrogen and oxygen **within the stack** and the resistive heating due to **internal** ohmic losses caused the stack core temperature to rise. (See column 9, lines 23-26; emphasis added).

In other words, the controller of Roberts et al. controls the hydrogen supply and the air supply to heat the fuel cell stack via the exothermic reaction of the hydrogen and oxygen within the fuel cell stack.

Therefore, Applicants respectfully assert that Roberts et al. fails to teach or suggest the limitation of a controller that controls the hydrogen supply and the air supply **to power the heater** as claim 23 recites.

As best understood by Applicants, Roberts et al. also fails to disclose a heater that is arranged to warm the fuel cell stack and the water supply as claim 23 explicitly recites. Applicants note claim 23 now includes the limitation that the heater is **external** to the fuel cell stack.

For example, as shown in an exemplary embodiment of FIG. 2 of the present application, the heater (e.g., resistive heater 136) is arranged to warm the fuel cell stack and the water supply (e.g., the water tank 150). Furthermore, the present application states that "[t]he first resistive heater 136 is preferably located near the fuel cell stack 102." (See paragraph [0029]).

The Examiner states that component 216 of Roberts et al. is a heater that is arranged to warm the fuel cell stack and the water supply. However, the Examiner's interpretation of this component appears to be incorrect, as nowhere does Roberts et al. describe component 216 as a heater. Instead, Roberts et al. states that "a **variable load 216** is electrically connectable by closing switch 218." (See column 8, lines 34-35; emphasis added).

The Examiner also states that applying a large current to the variable load heats the fuel cell stack. However, Roberts et al. expressly contradicts the Examiner's statements and instead states that "resistive heating due to **internal** ohmic losses caused the stack core temperature to rise." (See column 9, lines 25-26; emphasis added). In other words, any heat provided to the fuel cell stack of Roberts et al. is generated **internally** by applying the current to the fuel cell stack itself.

Therefore, Applicants respectfully assert that component 216 is **not** a heater that that is arranged to warm the fuel cell stack and the water supply and that is external to the fuel cell stack. Furthermore, Applicants respectfully assert that Roberts et al. fails to teach or suggest such a heater.

The Examiner further states that because Roberts et al. allegedly discloses a heater (component 216) that is arranged to warm the fuel cells stack and the water supply, that Roberts et al. inherently includes a controller that controls a hydrogen supply and an oxygen supply to power the heater. However, as stated above, it is apparent that Roberts et al. **fails** to disclose such a heater.

Therefore, Applicants respectfully assert that Roberts et al. also fails to expressly or inherently disclose a controller that **controls the hydrogen supply and the air supply to power the heater that is external to the fuel cell stack** as claim 23 recites.

Accordingly, Applicants respectfully assert that claim 23, as well as its dependent claims, should be allowable for at least the above reasons.

Claims 25, 26 and 29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Roberts et al. (U.S. Pat. No. 6,479,177) and Ernst et al. (U.S. Pat.

No. 6,489,048) as applied to claims 23, and 24 above, and further in view of Manery (U.S. Pub. No. 2003/0022031). This rejection is respectfully traversed.

As stated above, Roberts et al. fails to disclose a controller that controls a hydrogen supply and an air supply to power a heater that is external to the fuel cell stack and the water supply as claim 23 recites.

Therefore, Applicants respectfully assert that this rejection is now rendered moot.

Accordingly, Applicants respectfully assert that claims 25, 26, and 29, as well as their respective dependent claims, should be allowable for at least the above reasons.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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By: _____
Michael D. Wiggins
Reg. No. 34,754

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

MDW/DMA/dms/nsd